

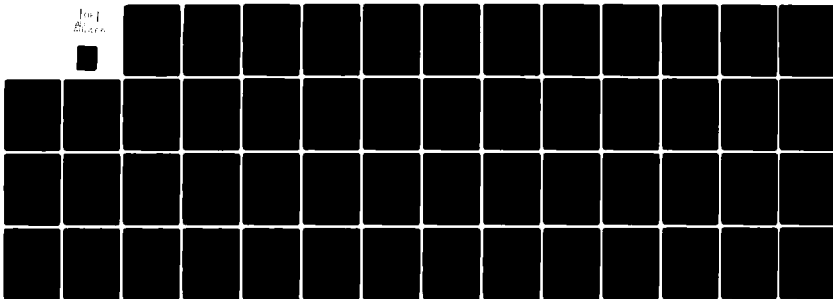
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MANUFACTURING METHODS AND TECHNOLOGY PROGRAM PLAN. UPDATE.(U)
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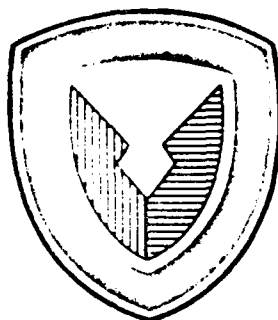
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U S ARMY

MATERIEL DEVELOPMENT AND READINESS COMMAND

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MANUFACTURING METHODS & TECHNOLOGY

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PROGRAM PLAN

UPDATE

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PREPARED BY

NOVEMBER 1981

MANUFACTURING TECHNOLOGY DIVISION
U S ARMY INDUSTRIAL BASE ENGINEERING ACTIVITY
ROCK ISLAND, ILLINOIS 61299

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INTRODUCTION

The MMT Program Plan Update

The MMT Program Plan is published once a year and provides, within a single source, a summary of current and near term work efforts included in the DARCOM MMT Program. Because of the changing nature of technology and weapons systems requirements, inclusion of a project in the Program Plan is not a guarantee that the project will ultimately be funded. The Plan, being a "snapshot" of the program at a point in time, does serve as an indicator of the areas towards which DARCOM's resources will be directed.

The last MMT Program Plan was published in May 1981 and covered work efforts planned for funding in the five year period FY81-85. The data contained in that Plan was as of April 1981. Since that time, the FY81 project funding has been finalized, the FY82 projects have completed the apportionment process, and the FY83 projects have been submitted and reviewed for the budget process. As a result of these events, a more definitive program than that offered in the 1981 Program Plan is now documented for Fiscal Years 1981-1983.

The MMT Program Plan Update contains project information presented by the last four digits of the project number and includes the project title and FY81-83 actual/proposed funding as applicable. The projects in the Update are grouped in an identical fashion as was the May 1981 Program Plan to permit easy cross referencing. More specifically, projects are separated by DARCOM Command, grouped according to broad categories, and then further subdivided according to component. In order to reduce volume, projects' problem and solution statements are not repeated in this Update. This type information was presented in the annual Program Plan and can, by cross referencing, be obtained from that Plan, extra copies of which are available upon request from the Industrial Base Engineering Activity. Other sources for this data are the Army's P-16 formats or computer retrieval from the Army's Manufacturing Technology Management Information System.

Industry Guide

An industry guide (Appendix A) has been included to explain the MMT budgeting process and to clarify, along with Appendix B (MMT Points of Contact), the interrelationships between the appropriations, commands, and personnel involved in the DARCOM MMT Program.

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MMT PROGRAM SUMMARY

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COMMAND	FY 81	FY 82	FY 83
ARRCOM/ARRADCOM (AMMO)	23,525	33,557	39,377
ARRCOM/ARRADCOM (WEAPONS)	6,144	10,733	12,302
AVRADCOM	9,093	13,360	21,414
CECOM	591	3,992	3,145
ERADCOM	4,901	7,521	14,385
AMMRC	4,351	5,000	5,000
MERADCOM	1,260	968	1,220
MICOM	11,149	11,504	21,844
TACOM	5,127	9,148	24,880
DESCOM	546	604	3,268
TSARCOM/NLABS	1,960	2,415	18,675
TOTAL	68,647	98,802	165,510

ARMAMENT MATERIAL READINESS COMMAND
AND
ARMAMENT RESEARCH AND DEVELOPMENT COMMAND

AMMUNITION PROGRAM

AMMUNITION FUNDING SUMMARY

(\$000)

CATEGORY	FY 81	FY 82	FY 83
CHEMICAL	3,283	4,140	10,206
ENERGY CONSERVATION	1,142	1,370	1,897
EXPLOSIVES	976	3,520	4,404
FUZES	1,327	0	1,569
GENERAL	3,533	2,960	0
LAP	3,482	7,519	6,472
METAL PARTS	998	2,356	2,727
POLLUTION ABATEMENT	2,319	3,720	2,543
PROPELLANTS	2,250	2,739	3,761
QUALITY CONTROL/TESTING	1,885	1,460	2,039
SAFETY	1,061	2,133	1,441
SMALL ARMS	<u>1,269</u>	<u>1,640</u>	<u>2,318</u>
TOTAL	23,525	33,557	39,377

MHT PROGRAM PLAN UPDATE - FY81 THRU 83 PROJECTS 10/22/81

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CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PRJ CUST
CHEMICAL	DECONTAMINATION	0913	SPIN COATING OF DECON AGENT CONTAINERS	82	337
	DETECTION/WARNING	0904	CHEMICAL REMOTE SENSING SYSTEMS	82	166
		0917	AUTO HIGH SPEED TESTING SYS F/H43A1 CHEMICAL DETECTOR/ALARM	83	1182
	FILTERS	4555	INFRARED MONITORING OF PYROTECHNIC BLENDING	81	1273
		0900	AUTOMATED MULTIPLE FILTER LIFE TESTER	83	769
		0905	MANUFACTURE OF IMPREGNATED CHARCOAL (METELERITE)	82	250
		0918	MODERNIZATION OF FILTER PENETRATION EQUIPMENT	83	50
		0919	POLLUTION ABATEMENT FOR WHETERITE CHARCOAL	83	256
	PROCESSES	1295	MUD OF CHARCOAL FILTER TEST EQUIPMENT	83	721
		1348	SUPER TROPICAL BLEACH	81	848
	PROTECTION	4491	TECHNOLOGY DATA BASE FOR PINACOLYL ALCOHOL	83	561
		4547	PROCESS TECHNOLOGY FOR IR XM76 GRENADE	82	822
	PYROTECHNICS	0909	AUTOMATED AGENT PERMEATION TESTER	83	561
		0912	PRODUCTION PROCESS F/PROTECTIVE MASK CANISTER BODIES	82	822
	GENERAL	0914	AUTOMATIC FINISHING OF MASK COMPONENTS	82	701
1335		MFG TECH FOR NEW PROTECTIVE MASK	83	741	
1709		IMPR PROCESSING OF STARTER MIX FOR PYROTECHNIC MUNITIONS	83	2046	
4161		PKDC TECH FOR PUN OF 81 MM IMPRV SMOKE MUN	82	500	
4417		USE OF RED PHOSPHORUS IN SMOKE POT APPLICATIONS	81	476	
ENERGY	GENERAL	4548	SAFETY IMPROVEMENTS OF PYROTECHNIC MIXING	83	955
		4281	CONSERVATION OF ENERGY AT MAPS	81	1142
		4267	CONTINUOUS PROCESS FOR GRANULAR COMPOSITION B	82	1370
		4404	IMPROVE RECOVERY OF ACETIC ACID IN RDX MANUFACTURING	82	1897
		4406	IMPROVE YIELD OF AMX DURING RDX NITROLYSIS	82	160
	EXPLOSIVES	4449	PROCESS IMPROVEMENT FOR COMPOSITION C-4	81	743
		4515	HEXAMINE MANUFACTURING AND SOLUTION PREPARATION	82	1380
		3708	PROCESS FOR MANUFACTURE OF ETHYLENE DIAMINE DINITRATE (EDAN)	83	246
		1500	EVAL INDUST CAPABILITY F/LOAD COMMERCIAL EXPL-HIGH USE MUNIT	81	157
		4200	TNT CRYSTALLIZER FOR LARGE CALIBER	83	633
	FUZES	4399	INSTRU IN-PROCESS MEASUREMENTS OF SULID LIQUID TNT	82	702
		4452	REPROCESSING DEMILLED EXPLOSIVES	82	291
		4521	MUD M223 FUZE PACK DJT	83	520
		4401	MUT FURNING + COLD HEADING LARGE FUZE COMPONENTS	83	194
		1001	PILOT LINE FOR FUZE FLUIDIC POWER SUPPLIES	81	300

NMT PROGRAM PLAN UPDATE - FY81 THRU 83 PROJECTS 10/22/81

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CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PRJ CUST
FUZES	POWER SUPPLIES	4266	MANUFACTURING, INSPECTION AND TEST EQUIP FOR MAG PMR SUPPLY	81	759
	Q/TESTING	3961	IMPROVE (3-D) VIBRATION ACCEPT TEST F/W32 M724	81	253
	THICK FILM	1800	PROCESSING FOR METAL-BASED SUBSTRATES	83	461
GENERAL	MISCELLANEOUS	4309	PROCESS DEVEL F/120MM AMMU	81	3485
		4000	AUTU M55 DETONATOR PRODUCTION EQUIPMENT	82	2960
		4062	AUTU MFG SUPPORT FOR MORTAR INCREMENT CONTAINERS	81	604
LAP	ASSEMBLY	4138	EQUIPMENT FOR AUTO PROCESSING OF ADDITIVE LINER	82	2418
		4198	AUTOMATED LAP OF STICK-PROPELLANT CHARGES	83	1411
		4311	AUTU PROD EQUIP FOR LAP OF XM 692 MINE DISPENSING SYSTEM	81	371
METAL PARTS	GENERAL	4368	DEV AUTOMATED EQPT FOR SEALING M55 DETONATORS	82	397
		4385	MECH OF ASSY OPERATION OF CENTER CORE IGNITERS	83	1010
		4501	ADHESIVE BOND OF IGNITER AND FLASH REDUCER BAGS OR COMPONENT	82	460
POLLUTION	GENERAL	4523	RAPID MOISTURE ANALYSIS OF EXPLOSIVE MIXES	83	716
		4251	AUTU MANU OF DELAY FOR M549 AND XM650 PROJECTILES	82	766
		4522	AUTU CARRIER CLEANING STATION FOR DET FAC	83	540
FUZES	GENERAL	4550	AUTU ASSY OF M22 FLASH SIMULATOR	83	565
		1701	BULK TRANSFER OF CHEMICAL MATERIALS	82	203
		4078	UPGRADE SAFETY READINESS AND PRODUCTIVITY OF EXIST MOLT PUOR	83	968
LAP	LOAD	4086	REPROCESSING EXPLOSIVE FINES AND DRILL SCRAP	82	593
		4497	HANDLING EQUIPMENT FOR ADAM OVERLAYS	82	593
		4510	AUTU ASSY OF ADDITIVE LINER TO TANK CTG	83	467
METAL PARTS	PACK	4520	DEV PROCESS F/PRESS LOADING 105MM HEAT-MP-T, XM815 PRUJ	83	221
		4524	LOW VOLUME AUTO MELT-POUR EQUIP FOR LOADING SMALL AP MINES	83	216
		4253	AUTU HIGH RATE UNPACK EQUIP FOR MORTAR PRUP CHGS	82	867
POLLUTION	CTG CASES	4516	AUTU CARTUNING OPERATIONS F/105MM	83	595
		4542	ULTRASONIC DEEP DRAWING OF CANNON STEEL CARTRIDGE CASES	83	621
		4369	IMPROVED PROJECTILE CAVITY SURFACE	82	636
FUZES	FURMING	4380	ABRASIVE MACHINING IN PROJECTILE MANUFACTURING	82	621
		4519	OUTLINE AUTOMATIC DETECTION OF TOOL WEAR	83	595
		4528	RUTARY FURGING OF DU PENETRATORS	83	636
METAL PARTS	PROJECTILES	4529	MFG OF PRECISION CONES FOR HEAT PROJECTILES	83	478
		6716	DEV CUMP-AID MODEL OF FORMING OPERATIONS FOR ARTILLERY MPIS	81	589
		1907	AUTU GAGING FOR 5 INCH PROJECTILE	81	377
POLLUTION	TOOLING	4189	HIGH FRAGMENTATION STEEL PRODUCTION PROCESS	82	603
		4517	PROCESS FOR RECYCLING STABALLOY MACHINING CHIPS	83	841
		4553	PROCESS PARAMETERS FOR COLD DRAWING ALLOY STEELS	81	350
FUZES	CHEMICAL	4164	ANALYSIS FOR PREDICTING FAILURE OF MFG TOOLING	82	177
		4535	PRECISION TOOLING FOR SMALL CALIBER AMMUNITION	83	108
		1318	EST CHEM PROD + FILL CLOSE + LAP TECH F/8VX2 XM736	81	493
POLLUTION	GENERAL	4298	EVALUATION OF DMN DISPOSAL ON HSAAP B-LINE	81	420
		1354	SLUDGE VOLUME REDUCTION AND DISPOSAL PROCESS STUDY	83	157
		4226	ON-LINE MONITORS FOR WATER POLLUTANTS	81	625

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CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PRJ COST
POLLUTION	GENERAL	4231	IN-PLANT REUSE OF POLLUTION ABATED WATERS	83	437
		4348	NOISE POLLUTION ABATEMENT F/SLAMP IN LCAAP	81	464
		4364	ON-LINE BIO SENSORS TO MONITOR MIXED WASTE STREAMS	82	313
	PROP/EXPL	4225	RED WATER POLLUTION ABATEMENT SYSTEM	82	264
		4489	ADVANCED POLLUTION ABATEMENT FOR DARCOM FACILITIES	81	258
		4511	DISPOSAL OF FINAL SLUDGE FROM ACID RECOVERY OPERATIONS	82	290
	RECYCLE	4344	EST WASTE DISPOSAL TECH FOR M687 BINARY PROJ FAC	81	160
		4540	CALCIUM CARBONATE COATING OF 7.62MM BALL PROPELLANTS	82	1778
	BALL	4145	CONTROL DRYING IN AUTO SB AND BALL PROP MFG	83	1228
		4273	AUTU PRODUCTION OF STICK PROPELLANT	82	304
PROPELLANTS	GENERAL	4533	LUVA PROPELLANT MANUFACTURING PROCESS	83	582
		4531	CONTINUOUS PRODUCTION OF NEW PROPELLANTS ON CAMBL	83	200
		4544	DEVELOP A THIRD GENERATION DYNAGUN TO SIMULATE TANK GUNS	82	380
	MULTI-BASE	4341	IMPROVED NITROCELLULOSE PURIFICATION	83	293
		4514	NONCONFINING NITRATING ACID REMOVAL	81	327
	NITROCELLULOSE	4059	NW CRYSTALLIZATION FOR CONTINUOUS PROP LINES	82	553
		4061	NITROGUANIDINE PROCESS OPTIMIZATION	82	838
	NITROGUANIDINE	4427	ON-LINE ANALYZERS FOR NITROGUANIDINE PLANT	83	976
		4027	SOLVENT RECOVERY/DRYING OF SINGLE BASE PROPELLANTS	81	400
	SINGLE BASE	4357	FLUX LEAKAGE INSPECTION SYSTEM FOR M483	82	246
QC/TESTING	INSPECTION	4358	AUTU LINE - PROCESS INSPECTION OF NEW EEDS (ALPINE)	83	408
		4359	IMPROVE PROCESS TECHNOLOGY F/INSPECTION OF CLOTH	82	765
		4473	AUTU LEAK DETECTION OF WP MUNITIONS	82	87
	NDT	4546	NOT FOR BUNDLED AREAS OF 60/80MM MORTAR INCREMENT CONTAINERS	83	190
		4454	AUTOMATIC INSPECTION DEVICE EXPLOSIVE CAST IN SHELL	81	905
	X-RAY	4545	DIGITAL IMAGE AMPLIFICATION X-RAY SYSTEM	82	925
		4071	EXPLOS PREVENTION IN DRY DUST COLLECTION SYSTEMS	83	944
	GENERAL	4291	BLAST EFFECTS IN THE MUNITIONS PLANT ENVIRONMENT	82	407
		4374	EXPLOSIVE SAFETY SHIELDS	83	63
	LAP	4429	IMPROVED SAFETY OF SCALE WEIGHING EQUIPMENT	82	423
SAFETY	PROP/EXPL	4285	TNT EQUIV TESTING FOR SAFETY ENGINEERING	82	124
		4288	EXPLOSIVE SAFE SEPARATION AND SENSITIVITY CRITERIA	81	728
		4318	OCCUPATIONAL EXPOSURE TO NITRATE ESTERS IN MUNITION MFG	82	215
	GENERAL	4453	PROPAGATION DISTANCE FOR ENERGETIC MATERIALS	83	809
		4492	WATER DELUGE SYSTEM APPLICATION IN MUNITIONS PLTS	82	234
	LAP	4291	BLAST EFFECTS IN THE MUNITIONS PLANT ENVIRONMENT	82	1885
		4374	EXPLOSIVE SAFETY SHIELDS	83	312
	GENERAL	4429	IMPROVED SAFETY OF SCALE WEIGHING EQUIPMENT	82	1107
		4285	TNT EQUIV TESTING FOR SAFETY ENGINEERING	82	442
	PROP/EXPL	4288	EXPLOSIVE SAFE SEPARATION AND SENSITIVITY CRITERIA	81	146
		4318	OCCUPATIONAL EXPOSURE TO NITRATE ESTERS IN MUNITION MFG	82	359

MMT PROGRAM PLAN UPDATE - FY81 THRU 83 PROJECTS
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CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PROJ CDST
SMALL ARMS	GENERAL	4351	IMPROVED STORAGE TECHNOLOGY FOR PRODUCTION MACHINE	82	421
		4539	AUTOMATIC CARTRIDGE CASE HARDNESS MEASUREMENT	83	319
		4150	NEW MFG PROCESSES FOR SMALL CAL PENETRATORS	83	296
		4177	NEW METH UF SM CAL TRACER CHARGE	81	211
		4503	NEW PROCESS FOR S&WS TRACER AMMUNITION	83	129
	5.56MM-.30 CAL	4506	5.56MM CARTRIDGE LINKING SYSTEM	81	500
		4534	MODERNIZED PROCESSES FOR MANUFACTURE OF NATO 5.56MM AMMO	82	129
		4538	5.56MM S&WS LINK ORIENTOR AND FEED SYSTEM	82	558
		4541	5.56MM S&WS LINK ORIENTOR AND FEED SYSTEM	83	577
		4551	AUTO PRIMER INSERT LACQUER AND ANVIL PRESENCE INSPECT SYS	83	812
			MFG PROCESS PARAMETERS FOR XM55/856 AMMO	83	145
				83	617
				82	513

WEAPONS PROGRAM

WEAPONS FUNDING SUMMARY

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CATEGORY	EY 81	EY 82	EY 83
FIRE CONTROL	1,184	1,960	1,659
GENERAL MANUFACTURING	1,635	2,363	4,835
LARGE CALIBER	2,677	4,998	4,078
QUALITY CONTROL/TESTING	80	190	360
SMALL CALIBER	<u>568</u>	<u>1,222</u>	<u>1,370</u>
TOTAL	6,144	10,733	12,302

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CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PRJ COST
FIRE CONTROL	GENERAL	7966	PRODUCTION ENGINEERING FOR TRITIUM RADIOLUMINOUS LAMPS	81	125
		8263	PROD. IN-PROCESS INSPECT EQUIP FOR LASER RANGE FINDER C-HARAC-82	82	253
	OPTICS	8327	TERISTICS	82	355
		8338	COMPUTER AIDED ENGINEERING (CAE) TECHNIQUES F/F/C	83	933
		7807	MANUFACTURE OF PRECISION FLUIDIC AMPLIFIERS	83	289
		8054	PROGRAMMED OPTICAL SURFACING EQUIP AND MET-HOLOGY-CAM	81	126
		8080	IMPROVE MFG TECH AND QUAL OF OPTICAL SCRATCH AND DIG STAND	81	266
		8108	HIGH SPEED FABRICATION OF ASPHERIC OPTICAL SURFACES	81	204
		8165	THERMOGRAPHIC EVALUATION OF OPTIC BANDS	82	170
		8209	STANDARDS FOR DIAMOND TURNED OPTICAL PARTS	82	283
		8261	PILOT PRODUCTION OF GRADIENT INDEX OPTICS	81	189
		8262	DEBUNDING OF EPOXY RESIN ADHESIVE SYSTEM	82	287
MANUFACTURING	EQUIPMENT	8154	PRODUCTION METHODS FOR OPTICAL WAVE GUIDES	82	274
		8226	COMPUTER INTEGRATION MFG (CIM), DUNC	83	132
	INFO SYSTEMS	8305	COMPUTER AIDED WORK MEASUREMENT SYSTEM (CAM)	82	437
		8306	INTEGRATED MANUFACTURING SYSTEM (ICAM)	81	750
	MISCELLANEOUS	8030	ON-LINE PRODUCTION INFORMATION SYSTEM (CAM)	83	208
		8160	MANUFACTURING GUIDE FOR ELASTOMERIC SEALS	82	85
		8252	INITIAL PRODUCTION HANDBOOK	82	2575
		7707	INDUCTION HEATING OF VARYING DIAMETER PREFORMS	82	360
	PROCESSES	7940	AUTOMATED PROCESS CONTROL FOR MACHINING (CAM)	82	123
		7948	SYNERGISTIC PLATINGS WITH INFUSED LUBRICANTS	81	421
		8113	ESTABLISH CUTTING FLUID CONTROL SYSTEM	82	195
		8120	ESTABLISHMENT OF ION PLATING PROCESS FOR ARMAMENT PARTS	81	164
	TOOLING	8135	ADAPTIVE CONTROL TECHNOLOGY (CAM)	82	150
		8225	SECOND ORDER MFG. METHODS FOR WEAPON COMPONENTS	81	142
		8231	ELECTROCHEMICAL GRINDING OF WEAPON COMPONENTS	83	60
		8254	IMPROVED CASTING TECHNOLOGY (CAM)	82	445
LARGE CALIBER	BREECH	8248	AUTOMATED SURFACE COATING OF CANNON (CAM)	83	566
		7730	APPLICATION OF HIGH-RATE CUTTING TOOLS	82	250
		7926	MANUFACTURE OF SPLIT RING BREECH SEALS	82	250
		7927	MUT ISOSTATIC PRESSING (HIP) OF LARGE CANNON COMP	82	80
		7928	GENERATION OF BASE MACHINING SURFACES	82	102
		8062	RUBUTIZED BENCHING OPERATIONS (CAM)	81	108
		8102	RAPID INTERNAL THREADING	81	295
		8105	APPLIC. OF POWDER METALLURGY FORGINGS TO LOMP.	82	137
		8117	ESTABLISH ROUGH THREAD BLANKS 8 IN. 4201 BUSHING	81	287
		8237	SHAPED CASTING OF ESR MATERIAL	82	366
			MULTIPLE MACHINING OF CARRIER HOUSINGS	82	110
				83	142
				81	292
				82	207
				82	103

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CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PRJ COST
LARGE CALIBER	BRECHM	8238	IMPROVED BORING TOOLS FOR BRECHM RING LUGS	83	634
	GENERAL	7724	GROUP TECHNOLOGY OF WEAPON SYSTEMS	82	203
		8249	SHORT-CYCLE HEAT TREATING OF WEAPON COMPONENTS	81	180
		8323	SPRAY-AND-FUSE PROCESSING OF ARMAMENT COMPONENTS	83	250
	GUN MOUNTS	8326	APPLICATION OF CORROSION RESISTANT GALVANIC COATINGS	82	102
		8035	COATING TUBE SUPPORT SLEEVES WITH BEARING MATERIALS	83	125
		8251	IMPROVED MELTING AND POURING TECHNOLOGY	81	205
	RECOIL MECH	8239	IMPROVED MACHINING PROCEDURES FOR RAILS	82	185
		8250	IMPROVED FABRICATION OF RECOIL WEAR SURFACES	81	200
		7916	APPLICATION OF LOW COST MANDREL MATERIALS	83	193
TUBES	BURE EVACUATOR BORING	7925	BURE EVACUATOR BORING	81	164
		7990	IMPROVED FABRICATION AND REPAIR OF ANODES	82	254
		8024	HIGH SPEED ABRASIVE BELT GRINDING	82	102
		8050	RECYCLING SPENT GUN TUBES BY ESR MELTING	83	125
		8103	HIGH VELOCITY MACHINING	81	158
		8106	LARGE CALIBER POWDER CHAMBER BORING	81	248
		8107	KEEP FEED CRUSH FORM GRINDING	81	100
		8151	PURTABLE ENGRAVING SYSTEM	81	142
		8152	IMPROVED ANODE STRAIGHTNESS FOR CHROMIUM PLATING	82	204
		8153	INCREASING GUN TUBE HEAT TREATMENT CAPACITY	82	37
	COMPUTER APPLICATIONS TO BORE GUIDANCE	8241	COMPUTER APPLICATIONS TO BORE GUIDANCE	81	414
		8242	DUAL PRESS LOADING	73	159
		8243	COMPUTER CONTROLLED CHROMIUM PLATING PROCESS	81	72
		8244	OPTIMIZATION OF HEAT TREAT	81	84
		8245	LOW CONCENTRATION (LC) CHROMIUM PLATING	81	171
	IMPROVED FINISHING OF GAS CHECK SEATS	8246	IMPROVED FINISHING OF GAS CHECK SEATS	82	280
		8259	MACH/MARKING OF FIRE CONTROL REGISTERS	81	325
		8341	MULLON CYLINDER CUT OFF MACHINE	82	306
		8346	DEBURRING OF BORE EVACUATOR HOLES	82	120
		8347	AUTOMATIC RIFLING HEAD ALIGNMENT	82	301
QUAL CONTROL	SIMULTANEOUS MOPD SINKING	8348	SIMULTANEOUS MOPD SINKING	83	260
		8351	IMP MFG OF QUADRANT FLATS 7 MUZZLE BRAKE	82	290
		8352	SKIVING OF GUN TUBE BORES	82	241
		8354	AUTO FLAME CUTTING OF HOT ROTARY FORGED TUBES	83	195
		8136	IMPROVE IMPULSE PROGRAMMER FOR HYDRAULIC SIMULATOR	81	60
	AUTOMATED INSPECTION OF WEAPONS COMPONENTS	8370	AUTOMATED INSPECTION OF WEAPONS COMPONENTS	82	153
		8253	MACHINE TOOL DYNAMIC MEASUREMENTS AND DIAGNOSTICS	82	261
		8346	DEBURRING OF BORE EVACUATOR HOLES	81	84
		8347	AUTOMATIC RIFLING HEAD ALIGNMENT	82	655
		8348	SIMULTANEOUS MOPD SINKING	83	237

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CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PRJ COST
SMALL CALIBER	BARRELS	7985	SMALL ARMS WEAPONS NEW PROCESS PRODUCTION TECHNOLOGY	81	436
				82	520
				83	815
		8001	RAPID FLOW PLATING OF SMALL CAL GUN TUBES	81	132
		8266	INVESTMENT CAST LINERS OF SUBSTITUTE ALLOYS	82	298
	GENERAL	8324	PROCESS CONTROLS FOR P/N WEAPONS COMPONENTS	83	115
				82	195
	SPRINGS	8267	STRESS PEENING OF HELICAL COMPRESSION SPRING	83	440
				82	209

AVIATION RESEARCH AND DEVELOPMENT COMMAND

AVRADCOM FUNDING SUMMARY

(\$000)

<u>CATEGORY</u>	<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>
AIRFRAME	1,863	2,493	1,500
AVIONICS	700	250	2,150
DRIVE SYSTEM	710	4,077	3,695
GENERAL	0	0	2,070
ROTOR SYSTEM	3,299	4,300	7,019
TURBINE ENGINE	<u>2,521</u>	<u>2,240</u>	<u>4,980</u>
TOTAL	9,093	13,360	21,414

HMT PROGRAM PLAN UPDATE - FY81 THRU 83 PROJECTS 10/22/81

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CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PROJ COST
AIRFRAME	FUSELAGE	7113	COMPOSITE REAR FUSELAGE MANUFACTURING TECHNOLOGY	81	1179
		7338	COMPOSITE TAIL SECTION	82	200
		7370	RING WRAP COMPOSITES	81	60
	GENERAL	7387	LOW COST RADAR CAMOUFLAGE AIRFRAME MATERIAL	82	1700
		7302	PROD OF T1B2 COATED LONG LIFE TOOLS	82	420
		7341	STRUCTURAL COMPOSITE FABRICATION GUIDE	83	100
	MISC COMPONENT	7243	MACHINING OPERATIONS ON KEVLAR LAMINATES	81	225
		7103	SEMI-AUTO COMPOSITE MFG SYS FOR FUSELAGE SEC STRUCT	81	73
	SECONDARY STRUCT	7202	THERMOPLASTICS FOR HELICOPTOR SECONDARY STRUCTURES	82	100
		7344	RIM MOLDING OF LOW COST SECONDARY STRUCTURES	81	60
7342		PULTRUSION OF HONEYCOMB SANDWICH STRUCTURES	83	175	
AVIONICS	STRUCT MEMBER	7374	B1-MATRIX CARBON-CARBON STRUCTURAL COMPONENTS	81	200
		7389	SUPERPLASTIC FORMING OF ALUMINUM COMPONENTS	82	93
		7414	JOINING OF REIN THERMOPLASTIC COMPOSITE STRUCT	83	500
	DISPLAYS	7319	MULTI-LEGEND DISPLAY SWITCH (MLU/S)	83	400
		7412	INFRARED DETECTOR FOR LASER WARNING RECEIVER	83	100
	GENERAL	7426	AIRCRAFT ELECTRONICS MFG PRODUCTIVITY IMPROVEMENT PROGRAM	81	50
		7383	USE OF MULDLED PLASTIC HARDWARE IN TWO AXIS DRY SYROSCOPES	82	650
		7391	BEARING DIAGNOSTIC AND RECLAMATION TECHNIQUES	82	250
	GUIDANCE SYSTEM	7155	CUST EFFECTIVE MFG METHODS FOR HELICOPTER GEARS	83	150
		7298	EVALUATION OF HIGH TEMPERATURE CARBURIZING	81	328
DRIVE SYSTEM	GEARS	7376	AUTO INSPECT AND PRECISION GRINDING OF SB GEARS	82	320
		7393	PROD OF COMPOSITE PITCH HOUSING	83	275
		7108	MFG TECHNIQUES FOR TRANSMISSION SHAFT SEALS	81	75
	SHAFTS	7354	INTEGRALLY STIFFENED HELICOPTER TRANS CASE	82	350
		7378	STAINLESS STEEL FABRICATED HOUSING	83	400
		7384	COMPOSITE ENGINE GEARBOX	81	215
	TRANSM HOUSING	7362	ENG DESIGN HANDBOOK FOR TITANIUM CASTINGS	82	499
		7427	ATTACK HELICOPTER PRODUCTIVITY IMPROVEMENT (API) PROGRAM	83	345
	GENERAL	7392	RADIATION CURE OF ROTOR BLADES	83	230
		7288	DET OF OPTIMAL CURE COND FOR PROD FIBER REIN COMPO	81	100
ROTOR SYSTEM	COMPOSITES	7339	COMPOSITE TAIL ROTOR BLADE	81	150
		7340	COMPOSITE MAIN ROTOR BLADE	82	175
		7340	COMPOSITE MAIN ROTOR BLADE	83	1130
	7340	COMPOSITE MAIN ROTOR BLADE	83	70	

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CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PRJ4 COST
ROTOR SYSTEM	COMPOSITES	7382	LOW COST COMPOSITE MAIN ROTOR BLADE FOR THE JH-60A	81	900
				82	2200
	HUB	7421	FILM RESIN IMPREGNATION OF BRAIDED HELICOPTER SPAR SECTION	83	3590
		7241	HUT ISOSTATICALLY PRESSED TITANIUM CASTINGS	83	75
	MISC COMPONENTS	7119	NON-DESTRUCTIVE EVAL TECHNIQUES FOR COMPOSITE STRUCTURES	82	500
		7345	IN-PROCESS CONTROL OF RESIN MATRIX CURE	82	700
	CERAMIC COMPONENTS	7350	CERAMIC COMPONENTS FOR TURBINE ENGINES	83	300
		7322	LOW COST TRANSPIRATION COOLED COMBUSTOR LINER	83	2420
	COMBUSTOR	7377	SPF/DB STATIC STRUCTURE FOR TURBINE ENGINES	81	125
		7036	ISOTHERMAL ROLL FURGING OF COMPRESSOR BLADES	83	300
TURBINE ENGINE	COMPRESSOR	7143	MFG OF SPKAY ABRADABLE GAS PATH SEAL SYSTEM	81	400
		7285	CAST TITANIUM IMPELLER FOR TURBINE ENGINE	81	185
		7291	TITANIUM POWDER METAL COMPRESSOR IMPELLER	81	280
		7415	RECOVERING DAMAGED T700 COMPRESSOR BLISKS	82	455
	GENERAL	7200	COMPOSITE ENGINE PARTICLE SEPARATOR	81	209
		7371	INTEGRATED BLADE INSPECTION SYSTEM (IBIS)	81	240
	TURBINE BLADE			82	275
				83	300
	TURBINE DISKS	7416	ADVANCED TURBINE AIRFOIL CASTINGS	83	400
		7417	LOW COST DISKS BY CAP	83	300
	TURBINE ROTOR	7197	FABRICATION OF INTEGRAL ROTORS BY JOINING	83	300
		7300	IMPROVED LOW CYCLE FATIGUE CAST ROTORS	81	190
				82	135
				83	500
		7351	COMPOSITE SHAFING FOR TURBINE ENGINES	81	400
				83	300

COMMUNICATION AND ELECTRONICS COMMAND

CECOM FUNDING SUMMARY

(\$000)

CATEGORY	FY 81	FY 82	FY 83
DETECTORS	80	0	0
DISPLAYS	109	950	0
FREQUENCY CONTROL	112	1,927	875
GENERAL	0	120	620
INTEGRATED ELECTRONICS	290	495	1,200
OPTICS	0	0	450
SOLID STATE	0	500	0
TOTAL	591	3,992	3,145

MMT PROGRAM PLAN UPDATE - FY81 THRU 83 PROJECTS
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CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PROJ COST
DETECTORS	PHOTO/OPTICAL	3050	III-V SEMICONDUCTOR PHOTODETECTORS	81	80
DISPLAYS	MISCELLANEOUS	3056 3073	ELECTROLUMINESCENT NUMERIC MODULE TACTICAL GRAPHICS DISPLAY PANEL	81 82	109 950
FREQ CONTROL	CRYSTALS	3047 3057 9268 9851	LOW COST HIGH STABILITY QUARTZ RESONATORS HIGH STABILITY VIBRATION RESISTANT QUARTZ CRYSTALS COST REDUCTION OF CERAMIC FLATPACK RESONATORS	83 81 82	875 57 100
GENERAL	OSCILLATORS	3048 3083 3069	TACTICAL MINIATURE CRYSTAL OSCILLATORS MICROPROCESSOR COMPENSATED CRYSTAL OSCILLATOR 36-40 AND 54-58 GHZ GUNN OSCILLATOR PRODUCTION PROCESS FUNCTIONAL SEGMENTATION OF AUTO TEST EQUIP	81 82 82 82	55 827 1000 120
INTEL ELECT	MISCELLANEOUS	3091	FUNCTIONAL SEGMENTATION OF AUTO TEST EQUIP	83	120
	AMPLIFIERS	9835	LIGHTWEIGHT SURVIVABLE ANTENNA FOR ARMOR VEHICLES	83	500
	CIRCUITRY	3036	INTEGRATED CONTROL CIRCUIT FOR THIN FILM TRANSISTOR DISPLAY SPECIAL COMPONENTS MFG TECHNIQUES FOR SINGLE CHANNEL RADIOS	82 81 83	495 290 1200
OPTICS	FIBER	3089	CONTINUOUS OPTIC FIBER FROM DOMESTIC MATERIALS	83	450
SOLID STATE	DIODES/RECTIFIERS	3068	INCREASE PROD OF SEMICONDUCTOR CONTROL DIODES	82	500

ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND

ERADCOM FUNDING SUMMARY

(\$000)

CATEGORY	<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>
DETECTORS	1,448	0	5,705
DISPLAYS	350	309	0
ELECTRON TUBES	0	1,308	2,190
GENERAL	681	1,179	2,179
INTEGRATED ELECTRONICS	805	1,179	1,783
LASER	523	621	550
OPTICS	518	0	0
PASSIVE COMPONENTS	0	596	0
POWER SOURCES	0	0	373
SOLID STATE	<u>576</u>	<u>2,329</u>	<u>1,605</u>
TOTAL	4,901	7,521	14,385

MNT PROGRAM PLAN UPDATE - FY01 THRU 83 PROJECTS 10/27/81

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CATEGORY	CUMPOMENT	EFFORT NO	TITLE	FY	PRJ CUST
DETECTORS	ARRAYS	5110	COMMON MODULE DETECTOR ARRAY	81	753
	INFRARED/UV	5151	LIQUID PHASE EPITAXIAL 1600TE	81	3420
	LASER	9588	THIRD GENERATION LOW COST GUGGLE TUBE	81	695
	NUCLEAR	5066	1 TO 3 MICRON AVALANCHE DETECTORS	83	470
		2000	RADIATION HARDNESS ASSURANCE TEST FOR MOS DEVICES	83	700
DISPLAYS		5103	CADMIUM TELLURIDE (CD-TE) RADIATION DETECTORS	83	1135
		3505	HIGH CONTRAST CATHODE RAY TUBE	81	350
				82	309
ELECTRON TUBES	BEAM	5010	BUNDED GRID CONVERGENT ELECTRON GUN	82	867
	CATHODE	5019	LASER-CUT SUBSTRATES FOR MW TUBES	82	431
	OTHER	5111	VAPOR ORGANIC METALLIC EPITAXIAL GROWTH PROCESS	83	650
	COMPONENTS	5102	HIGH CURRENTIVITY-HIGH ENERGY PRODUCT MAGNETS	83	1540
		5107	MILLIMETER WAVE PUMPER SOURCE COMBINER	82	1179
GENERAL	MISCELLANEOUS	5178	PROGRAM FOR A GRAPHITE/EPOXY ANTENNA REFLECTOR	83	1179
		5017	NON-HERMETIC HYBRID MICROCIRCUITS	81	681
		5119	XRAY LITHOGRAPHIC PRODUCTION TECHNIQUES FOR VLSIC	83	1020
	CIRCUITRY	5160	CONTINUOUS AUTO PLASMA PROCESSING OF SUBMICRON IC75	83	368
		5168	AUTOMATIC RETICLE INSPECTION SYSTEM, PHASE 1	83	457
INTLG ELECT		9905	LOW COST MONOLITHIC GALLIUM ARSENIDE MW INTEG CATS	82	938
		9909	PRODUCTION TECHNIQUES FOR SI MW PAR TRANSISTORS	81	1179
	GENERAL	3031	10-6 MICRON CO2 LASERS	81	805
		5113	10-MICRON PULSED WAVEGUIDE LASER	81	523
	MODULES	5114	MINI LASER TRANSMITTER MODULE	83	550
LASER				82	621
OPTICS	NIGHT VISION	9889	THIRD GENERATION 0.9 MICRON WAFER INTENSIFIER TUBE	81	518
PASSIVE COMP	MISCELLANEOUS	5109	ULTRAWIDE BANDWIDTH SAW DELAY LINES	82	596
PUMER SOURCES	BATTERIES	5162	EXJAM BATTERY MANUFACTURING TECHNOLOGY, PHASE 1	83	373
SOLID STATE	DELAY LINES	5174	AUTOMATIC SPUTTERING PROCESS CONTROL F/PRODUCING 2NJ PHASE 1-83	83	292
		3011	MILLIMETER-WAVE INDIUM PHOSPHIDE GUNN DEVICES	82	1179
		5041	MILLIMETER WAVE MIXERS AND ARRAYS	81	576
	DIODES	5148	IMPATT DIODE SOURCES (94 GHZ)	81	1150
		5149	220 GHZ IMPATT DIODE SOURCES	83	1313

MATERIALS AND MECHANICS RESEARCH CENTER

AMMRC FUNDING SUMMARY

(\$000)

CATEGORY	EY 81	EY 82	EY 83
GENERAL	250	0	0
TESTING	4,101	5,000	5,000
TOTAL	4,351	5,000	5,000

MNT PROGRAM PLAN UPDATE - FY81 THRU 83 PROJECTS 10/22/81

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CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PROJ COST
GENERAL	MISCELLANEOUS	6390	PROGRAM IMPLEMENTATION AND INFORMATION TRANSFER	81	250
TESTING	CHEMICAL	6350	MATERIALS TESTING TECHNOLOGY (MTT)	81	914
	ELECTRONICS	6350	MATERIALS TESTING TECHNOLOGY (MTT)	82	1110
	MECHANICAL	6350	MATERIALS TESTING TECHNOLOGY (MTT)	83	625
	NOT	6350	MATERIALS TESTING TECHNOLOGY (MTT)	83	600
				81	875
				82	1070
				83	975
				81	2312
				82	2820
				83	2600

MOBILITY EQUIPMENT
RESEARCH AND DEVELOPMENT COMMAND

MERADCOH FUNDING SUMMARY

(\$000)

CATEGORY	FY 81	FY 82	FY 83
BRIDGING	663	0	0
GENERAL	175	0	350
LAND MINES	0	968	870
POWER SOURCES	<u>422</u>	<u>0</u>	<u>0</u>
TOTAL	1,260	968	1,220

MNT PROGRAM PLAN UPDATE - FY01 THRU 03 PROJECTS 10/22/01

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CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PROJ COST
BRIDGING	REINFORCEMENT	3745	ALUMINUM SKIN-GRAPHITE/EPoxy SANDWICH BRIDGE REINF	81	454
	STRUCTURAL MEMBERS	3759	KEVLAR CABLE REINFORCEMENT FOR MILITARY BRIDGES	81	109
GENERAL	MISCELLANEOUS	3743	COMPOSITE SPUN MATERIAL TRAVERSING BM FOR BRIDGES	81	100
		3718	DETERMINE PRODUCTION METHODS AIR CYCLE CIRCULATOR	83	350
LAND MINES	NEUTRALIZERS	3747	LACV-30, SKIRT AND FINGER COMPONENTS	81	69
		3749	HYDRAULIC RUTOR ACTUATORS	81	106
POWER SOURCES	TURBINES	3796	COMBAT VEHICLE DEGAUSSING	82	968
		3717	HIGH TEMPERATURE NOZZLE FOR 10KW POWER UNIT	81	870
					422

MISSILE COMMAND

MICOM FUNDING SUMMARY

(\$000)

CATEGORY	FY 81	FY 82	FY 83
CONTROL SYSTEM	850	571	2,100
SUPPORT EQUIPMENT	0	0	450
GUIDANCE SYSTEM	5,060	4,399	11,853
MISSILE STRUCTURE	864	241	1,558
PIP	725	0	2,000
PROPULSION	2,989	4,561	2,293
TEST EQUIPMENT	<u>661</u>	<u>1,732</u>	<u>1,590</u>
TOTAL	11,149	11,504	21,844

MHT PROGRAM PLAN UPDATE - FY81 THRU 83 PROJECTS 10/30/81

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CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PROJ CUST
CONTROL SYSTEM	CIRCUITRY	1063	SEMIADDITIONAL REEL TO REEL FLEX PRINT PROCESS	82	421
		1075	ELECTRONICS COMPUTER AIDED MANUFACTURING (ECAM)	81	700
		1109	RUBUTIZED WIRE HARNESS ASSEMBLY SYSTEM	83	1100
SUPPORT EQPT	CIRCUITRY HYBRIDS	1065	PROD OF QUIET RADAR SIGNAL PROCESSORS USING VLSI TECHNOLOGY	83	602
		1066	ADDITIVE SINGLE AND MULTILAYER HYBRID CIRCUITRY	83	1000
		1095	AUTOMATIC SEALING OF HYBRIDS	83	301
GUIDANCE SYS	INTEG ELECT	1031	HIGH SPEED PLATING OF CARD EDGE CONTACTS	82	301
		1072	MULTIPLE HIGH RELIABILITY/LUM VOLUME LSI MFG	81	722
		1097	LOW MASS FIBER CONNECTOR	82	1540
	OPTICS	1103	STABLE MATERIALS ? MANUFACTURING FOR MULTILAYER PWB	83	1444
		3263	MANF. TECH. FOR PWB UTILIZING LEADLESS COMPONENTS	83	1200
		3411	MANUFACTURE OF NON PLANAR PRINTED CIRCUIT BOARDS	81	250
	RADOMES	1069	MANUFACTURE OF GRADIENT INDEX LENSES	82	511
		3445	PRECISION MACHINING OF OPTICAL ELEMENTS	81	400
		1122	PRODUCTION OF HIGH PERFORMANCE LOW COST CERAMIC IR DOMES	82	738
	SEEKERS	1083	IMP MFG PROC F/FOUR-IN DIAMETER FOCAL PLANE ARRAY SEEKERS	83	400
		1123	IMPROVED MFG PROCESSES STARTING FOCAL PLANE ARRAY DETECTORS	83	2000
		1124	IMPROVED MFG PROC F/8-10 MICRON SCANNING TDI FPA DETECTORS	83	2000
MISSILE STRUCT	SENSORS	1139	MILLIMETER RADIOMETRIC SEEKERS FOR SUBMISSILE APPLICATION	81	1300
		3186	IMPROVED MANUFACTURE OF INFRARED SUBMISSILE SEEKERS	82	671
		1090	ION IMPLANTED THIN FILM TRANSISTORS	83	500
	WINDOW/RADOME	1094	PROD METH F/MILLIMETER MONOPULSE ANTENNA F/OIR FIRE APPL	83	350
		1099	MFG METH AND TECH F/PIN DIODES AT MILLIMETER WAVE FREQUENCY	83	1190
		1104	IMPROVED SANDWICH DETECTOR FABRICATION FOR INFRARED SEEKERS	83	300
	COMPOSITES	1120	DETECTOR GRADE CAUMIUM SULFIDE (CUS)	83	500
		1042	PRODUCTION OF COMPOSITE RADOME STRUCTURES	81	300
		1108	RF AND LASER HARDENING OF MISSILE DOMES	81	755
	COMPONENTS	1118	NITRIDE-BASED MILLIMETER ANTENNA WINDOW AND RADOMES	82	440
		1020	MFG PROCESSES FOR FUSED SILICA FIBERS	83	421
		1026	LOW-COST MFG TECHNIQUES FOR MI PRODUCTION MISSILE VANES (ICAM)	83	300
PROPULSION	MOTOR CASES	1080	LOW COST CARBON/CARBON NOSETIPS	83	458
		1082	HIGH ANGLE TAPE WRAPPED HEATSHIELDS	83	430
		1073	REAL TIME ULTRASONIC IMAGING	83	500
PIF	MACHINING ALL	1021	COMPUTERIZED PROD PROC PLAN FOR MACH CYLINDRICAL PARTS (ICAM)	81	200
		1121	MISSILE MANUFACTURING PRODUCTIVITY IMPROVED PROGRAM	81	234
		1088	OPTIMIZED MANDREL FAB AND UTILIZATION F/CUMP MOTOR CASES	83	725
PROPULSION	MOTOR COMP	1089	INTEGRAL ROCKET MOTOR COMPOSITE PULE PIECES AND ATTACHMENTS	81	2000
		3294	PRODUCTION PROCESS FOR ROTARY ROLL FORMING	83	700
		1050	LOW COST BRAIDED ROCKET MOTOR COMPONENTS	81	481
PROPULSION	MOTOR COMP	1051	REPLACEMENT OF ASBESTOS IN ROCKET MOTOR INSULATIONS	82	250
				81	159
				82	430
PROPULSION	MOTOR COMP			81	481
				82	475
				82	572

MMT PROGRAM PLAN UPDATE - FY81 THRU 83 PROJECTS 10/30/81

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CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PRJ COST
PROPULSION	MOTOR COMP	1086	CUBALT REPLACEMENT IN MARAGING STEEL F/ROCKET MOTOR COMP	81	300
		1087		82	517
	NOZZLES	3423	APPLICATION OF COMMERCIAL GRADE KEVLAR TO ROCKET MOTOR COMP	83	550
				83	400
	PROPELLANTS	1044	LOW COST/HIGH PERFORMANCE FIBROUS GRAPHITE ROCKET NOZZLES	81	300
		1078		82	602
		3447	CONTINUOUS PROCESS FOR PROPELLANT MANUFACTURE	82	1477
			CONVERSION OF SURPLUS PENTABORANE TO NHC	83	893
			SCALE UP AND DEMO FOR THE RECDV OF CARBORANE FROM WASTE PROP	81	375
		3449		83	200
TEST EQPT	ELECT EQPT	3115	OPTIONAL PROPELLANT INGREDIENTS	81	250
				82	431
	COMPONENTS		ENGINEERING FOR CALIBRATION EQUIPMENT	81	661
		1060		82	800
		1076	ELECTRICAL TEST AND SCREENING OF CHIPS	83	640
		1111	AUTOMATIC RECOGNITION OF CHIPS	82	451
		3241	AUTOMATIC COMPONENT VERIFICATION SYSTEM	82	481
			AUTOMATIC X-RAY READER TEST EQUIPMENT FOR 3D X-RAYS	83	350
				83	600
				83	

TANK AND AUTOMOTIVE COMMAND

TACOM FUNDING SUMMARY
(\$000)

<u>CATEGORY</u>	<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>
ARMOR	2,591	3,201	4,965
BODY/FRAME	580	327	2,435
DRIVE SYSTEM	360	2,215	6,905
GENERAL	859	2,430	5,150
PIP	0	0	3,200
SUSPENSION	362	525	650
TESTING	0	0	625
TRACK	<u>375</u>	<u>450</u>	<u>950</u>
TOTAL	5,127	9,148	24,880

MNT PROGRAM PLAN UPDATE - FY81 THRU 83 PROJECTS
10/30/81

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CATEGORY	COMPONENT	EFFORT NU	TITLE	FY	PROJ COST
ARMOR	GENERAL	5065	ADVANCED TECHNOLOGY SURVEILLANCE COUNTERMEASURES MATERIALS	83	350
		5088	HIGH-POWER ELECTRON BEAM WELDING IN AIR	83	300
		5094	ALLOY AND ARMOR STEELS TREATED WITH RARE EARTH ADDITIVES	83	500
		6026	POLYMER QUENCHANTS	83	150
		6038	HIGH DEPOSITION WELDING PROCESSES FOR ARMOR	82	700
	HULL/BODY	6057	XN-1 COMBAT VEHICLE-MFG TECHNOLOGY	83	600
		6059	FVS COMBAT VEHICLE-MFG TECHNOLOGY	81	67
		4392	JOINING DISSIMILAR METALS	82	456
		5014	FOUNDRY CASTING PROCESSES USING FLUID FLOW + THERM ANALYSIS	83	300
		5091	HEAVY ALUMINUM PLATE FABRICATION	81	291
BODY/FRAME	COATING	6053	WELDING SYSTEMS INTEGRATION	82	1460
		6073	ADAPTION AND AUTOMATION OF ACOUSTIC EMISSION WELD MONITORING	83	300
		6085	IMPROVED CASTING PROCESSES	83	85
		6098	PRODUCTION OF SPECIAL ARMOR STEEL	81	50
		6099	MANUFACTURING METHODS FOR SPECIALIZED ARMOR MATERIALS	81	30
	COMPOSITES	5068	NEW ANTI-CORROSIVE MATERIALS AND TECHNIQUES	81	240
		6012	PRODUCTION TECHNIQUES FOR THE APPLICATION NEW NONTXIC PAINT	83	53
		6000	LIGHTWEIGHT TAIL-UP HOOD/FENDER ASSEMBLY	83	500
		6058	EXPLOSIVE BONDING OF COMPOSITE MATERIALS	83	500
		5064	LIGHTWEIGHT SADDLE TANK	83	150
DRIVE SYSTEM	FUEL TANKS	5019	TACTICAL VEHICLE STORAGE BATTERY	81	130
		6064	ADHESIVES FOR TACTICAL VEHICLE ATTACHMENTS	82	250
	MISC COMPONENTS	6084	ARC STUD WELDING (PHASE 1)	83	250
		6067	AUTOMATED PROTOTYPE FRAME WELDING	83	100
		5053	MANUFACTURE OF ENGINE COMPONENTS OF CERAMIC	82	77
	STRUCTURAL MEMBERS	5085	PROD TECH FOR FAB OF TURBINE ENGINE RECUPERATOR	83	500
		5097	INTEGRALLY CAST LOW COST COMPRESSOR	81	500
		6008	AUTOMATED COMPUTER CONTROL LASER MACHINING	81	50
		6018	JOINING OF ATTACHMENTS TO CERAMICS	83	250
		6020	PRODUCTION OF REINFORCED CERAMIC COMBUSTORS	83	300
TRANSMISSION	ENGINE	6028	PRODUCTION QUALITY CONTROL BY AUTO INSPECTION EQUIPMENT(CAM)	83	250
		6079	AGT-1500 ENGINE	81	60
		5005	COLD FORGED GEARS TO DRAWING TOLERANCES	83	450
		5024	GEAR DIE DESIGN AND MFG UTILIZING COMPUTER TECHNOLOGY (CAM)	82	4100
		5083	UPSCALING OF ADVANCED POWDER METALLURGY PROCESSES	83	300
	TRANSMISSION	5086	SURFACE HARDENING AND ALLOYING OF TRANS SYSTEMS WITH LASERS	82	640
				83	300
				83	150
				82	475
				83	255

MHT PROGRAM PLAN UPDATE - FY81 THRU 83 PROJECTS 10/30/81

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CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PRD COST
DRIVE SYSTEM	TRANSMISSION	6092	AUSROLLED GEARS FOR TACTICAL VEHICLES	83	350
		5082	FLEXIBLE MACHINING SYSTEM PILOT LINE FOR TCV COMPONENT	81	779
GENERAL	MISCELLANEOUS	5090	IMPROVED AND COST EFFECTIVE MACHINING TECHNOLOGY	83	750
		5093	MANUFACTURING METHODS FOR HIGH SPEED MACHINING FERROUS ALLOY	81	30
		6025	MANUFACTURING LASER FACILITY	82	150
		6030	COMPUTER SIMULATION OF TCV MANUFACTURING PROCESSES	83	350
		6041	APPLICATION OF ADAPTIVE CONTROL	82	450
PIP	MISCELLANEOUS	6054	ADVANCED METROLOGY SYSTEMS INTEGRATION	83	550
		6090	TUBELE ARMY DEPOT PRODUCTIVITY IMPROVEMENT PROGRAM	81	1000
		6089	ABRAMS TANK PRODUCTIVITY IMPROVEMENT (PHASE II)	83	400
SUSPENSION	ROAD WHEELS	4559	ABRAMS TRANSMISSION PRODUCTIVITY IMPROVEMENTS	83	300
		6076	PRESSURE CASTING TECHNIQUES FOR ALUMINUM COMPONENTS	83	500
		6011	AUTOMATED DEPOT INSPECTION OF ROAD WHEELS	81	50
TESTING	TORSION BAR	5002	SPRINGS FROM CARBON-FIBER PLASTIC-COMPOSITES	81	800
		6029	FABRICATING TORSION BAR SPRINGS FROM HIGH STRENGTH STEEL	82	250
		6078	MANUFACTURING PROCESS FOR METAL MATRIX COMPOSITES	83	300
TRACK	RUBBER PADS	4264	AUTO DYNAMETER CONTROL FOR STANDARDIZED INSPECTION TESTING	83	625
		5075	INSERTS AND FRICTION FILLERS FOR TRACK RUBBER PADS	83	250
		4514	RUBBER FOR MILITARY TRACK	81	200
	SHOES	5054	HARD FACING OF TRACK SHOES	83	175
		5092	LASER SURFACE HARDENING COMBAT VEHICLE COMPONENTS	81	175
			RHEOCAST PRESSURE CASTING FOR COMBAT VEHICLE PARTS	83	250

DEPOT SYSTEMS COMMAND

DESCOM FUNDING SUMMARY

(\$000)

CATEGORY	FY 81	FY 82	FY 83
ARMOR	0	283	162
BODY/FRAME	421	74	0
DRIVE SYSTEM	0	0	625
GENERAL	0	0	1,820
TRACK	125	247	<u>661</u>
TOTAL	546	604	3,268

MMT PROGRAM PLAN UPDATE - FY81 THRU 83 PROJECTS
10/30/81

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CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PROJ COST
ARMOR	HULL/BODY	2001	PROVIDE PROTOTYPE ROBOTS FOR AUTOMATED BLAST CLEANING	82 83	283 162
BODY/FRAME	SUSPENSION SYSTEM	4002	ROBOTIZED WELDING OF M113A2 SUSPENSION	81 82	421 74
DRIVE SYSTEM	ENGINE	7001	AUTOMATED DYNAMOMETER CONTROL FOR STANDARDIZED INSP TESTING	83	625
GENERAL	MISCELLANEOUS	0002 2002	CAM APPLICATION OF ROBOTICS TO SHELTER REFINISHING LUNG RANGE DEPOT PRODUCTIVITY IMPROVEMENT PROGRAM - LEAD	83 83	420 1400
TRACK	RUBBER PADS SHEETS	4003 4005 4004	RUBBER INJECTION MOLDING OF DOUBLE PIN TRACK WATER JET MATERIAL REMOVAL SYSTEM AUTOMATED DISASSEMBLY OF DOUBLE PIN TRACK	83 81 82 83	345 125 247 316

TROOP SUPPORT AND AVIATION READINESS COMMAND

TSARCOM/HILABS FUNDING SUMMARY

(\$000)

<u>CATEGORY</u>	<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>
GENERAL	0	2,000	10,500
TURBINE ENGINE	1,950	415	8,000
TESTING	0	0	175
TROOP SUPPORT	<u>10</u>	<u>0</u>	<u>0</u>
TOTAL	1,960	2,415	18,675

HMT PROGRAM PLAN UPDATE - FY81 THRU 83 PROJECTS 11/02/81

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CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PRJ COST
GENERAL	ALL	8193	HMT AIRCRAFT MANUFACTURING PRODUCTIVITY IMPROVEMENT	82	2000
		8195	AAM AIRCRAFT MANUFACTURING PRODUCTIVITY IMPROVEMENTS	83	7000
				83	3500
TURBINE ENGINE	GENERAL	8192	TURBINE ENGINE PRODUCTIVITY IMPROVEMENT	81	1725
	TURBINE BLADES	8190	IMPRVD CUTTER LIFE, T-700 COMP BLISK/IMPELLER MILLING OPER	83	8000
				81	225
				82	415
TESTING	NDT	8073	COMPUTERIZED COLDK MATCHING SYSTEM	83	175
TRCOP SUPPORT	PROTECTION	8063	IMPROVED METHODS OF MFG OF BUTYL RUBBER HANDWEAR	81	10

APPENDICES

INDUSTRY GUIDE

This section of the MMT Program Plan explains the Army programming cycle for the MMT Program. The objective of the MMT Program is to develop new manufacturing methods and processes that will reduce the cost of producing weapon systems. The program consists of approximately 200 projects annually that concentrate on improving and/or developing manufacturing methods, techniques and processes.

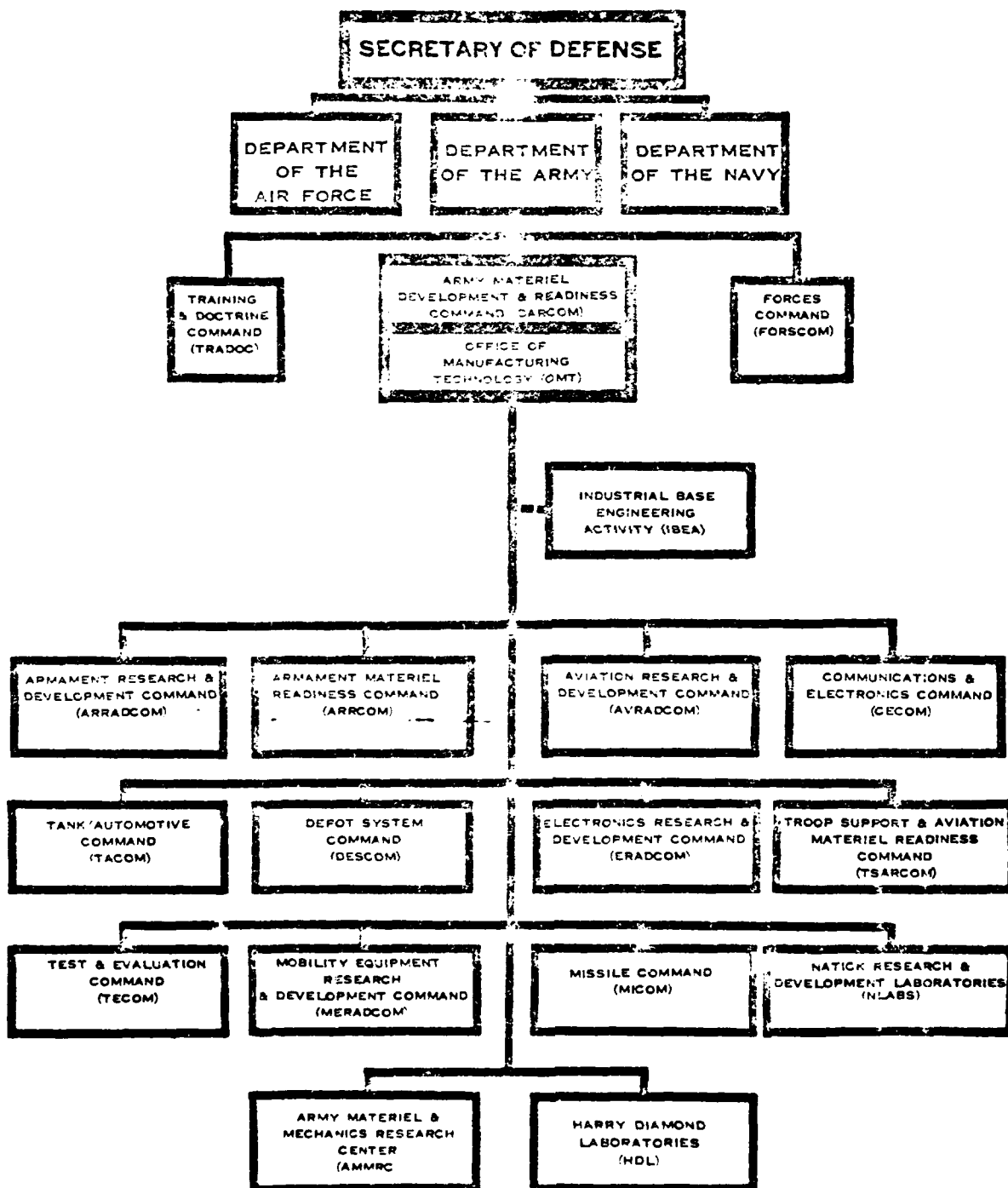
The scope of the MMT Program covers all three of the military services. Within the Army, the Office of Manufacturing Technology (OMT) has been established to provide overall program responsibility. Functional responsibility is at the commodity oriented, Major Subcommands (SUBMACOM'S). The SUBMACOM'S plan, formulate, budget, and execute individual projects. The Industrial Base Engineering Activity (IBEA) assists OMT on the technical aspects of the Manufacturing Technology Program. The organizational chart on the next page depicts this supporting framework.

Throughout the Program Plan reference is made to various appropriations. These appropriations are identified in the Army Management Structure (AR 37-100-FY) and are established by the US Congress as a standard accounting system. Most MMT efforts are funded through the Procurement Appropriations which include (1) Aircraft, (2) Missile, (3) Weapons and Tracked Combat Vehicles, (4) Ammunition, and (5) Other. A few projects receive funds for the Operations Maintenance, Army (OMA) appropriation.

Identification of manufacturing problems is the first step in developing an MMT Program. Problem areas are conceptualized and compiled into a planning document (the Program Plan). At the date of the publication, the Program Plan contains one funded year, one programmed year and three planned years. As the program cycle proceeds the concepts are refined and project proposals are developed. A diagram depicting this programming cycle is shown on page A-3. To fully understand the entire programming cycle one must realize that DOD budgets on a Fiscal Year (FY). The FY starts on 1 October and ends the last day of the following September. For example, on 1 October 1980, the Army began the first quarter of FY81.

The following programming cycle chart depicts the various activities and stages that MMT projects go through. Concepts are first identified in the five year plan according to the projected year funding is expected. Each year these concepts are reevaluated and move forward until they reach the budget phase. Industry has the opportunity to participate during the annual MTAG conference. At this gathering the current program, the latest budget project and the Program Plan are discussed.

UNITED STATES ARMY MATERIEL DEVELOPMENT & READINESS COMMAND (DARCOM)



Calendar Year Activities
MMT Planning/Budgeting/Review Cycle

YEARLY ACTIVITIES

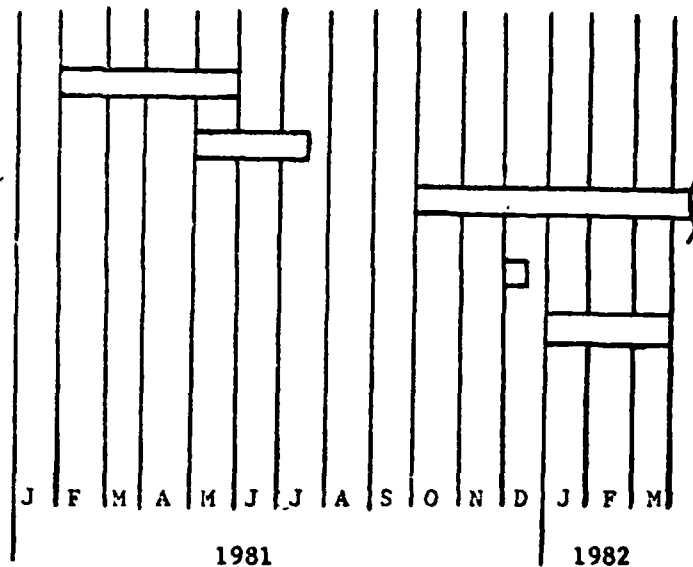
Program Plan (FY81-85)

FY83 Budget Submission/Review

FY82 MMT Funds Released

MTAG Annual Conference

FY83 Apportionment Submission/
Review



The programming cycle shown above starts with the Program Plan. This document consolidates individual submissions from the SUBMACOM'S and develops the planned program. Because Army budget guidance provides "ceilings," potential projects must be prioritized which results in some being excluded or slipped. Inclusion in the Plan does not guarantee that the project will be funded. The level of funding is dependent upon what Congress will appropriate each year.

As projects approach the start of the funding cycle specific objectives and work scopes are developed. These projects are documented in what is known as a P-16. A P-16 is simply the format that is utilized to document data elements such as estimated cost, economics, and description of work. (The P-16 format is described in AR 700-90).

The budget submission represents the first P-16 submitted for inclusion in the program. This submission is followed about nine months later by the more definite apportionment submission. Projects are then funded when the new fiscal year begins. Although this is the normal planning cycle, a project can enter the planning cycle at any point in time. Such a project would be known as a late start submission and funding is usually at the expense of another project.

Criteria for actually funding individual projects include technical, operational, and economical feasibility. The potential for technical success, the means by which the results will be implemented, the potential payback or return on investment and the interrelationships that exist between factors are all evaluated.

For a more comprehensive understanding of the MMT program, the following list of documents is provided for reference:

DOD Instruction 4200.15, Manufacturing Technology Program

AR 700-90, The Army Industrial Preparedness Program

AR 37-100, The Army Management Structure

AR 11-28, Economic Analysis and Program Evaluation for Resources
Management

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DCSRDA (PA 1497, Aircraft)

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DCSRDA (PA 3297, Weapons; PA 3197, Tracked Combat Vehicles)

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AV: 227-0106

DCSRDA (PA 5297, Communications/Electronics)

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C: 202 695-1881

AV: 225-1881

DCSRDA (Other Procurement Activities:

PA 5197, Tactical and Support Vehicles)

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AV: 224-8720

DCSRDA (Other Procurement Activities:

PA 5397, Other Support)

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AV: 224-8720

DCSRDA (PA 4950, Ammunition)

ATTN: DAMA-CSM-DA, COL Jack King

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DCSRDA (PA 4950, Ammunition)

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DATE
FILMED
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